

LISTING OF THE CLAIMS

1. (original) A system for printing images on a substrate, comprising:
 - a) a black ink-jet ink including:
 - i) a liquid vehicle including water, and from 15 wt% to 30 wt% organic solvent, wherein from 3 wt% to 10 wt% of the organic solvent is a methylated pentanetriol co-solvent, and
 - ii) from 1 wt% to 6 wt% of a dispersant-functionalized black carbon pigment; and
 - b) a printhead loaded with the black ink-jet ink which is configured to jet the black ink-jet ink at a firing frequency from 15 kHz to 25 kHz.
2. (original) The system of claim 1, wherein the carbon pigment is from about 5 nm to about 10 μm in size.
3. (original) The system of claim 1, wherein the liquid vehicle comprises from about 70 wt% to about 99 wt% of the ink-jet ink composition.
4. (original) The system of claim 1, wherein, in addition to the methylated pentanetriol, the organic solvent includes at least two other organic co-solvents, each being present at from about 1 wt% to about 10 wt%.
5. (original) The system of claim 1, further comprising from 0.001 wt% to 0.1 wt% surfactant.
6. (original) The system of claim 1, wherein the composition is surfactant free.
7. (original) The system of claim 1, further comprising from 0.1 wt% to 4 wt% of an ammonium salt.

8. (original) The system of claim 1, wherein the methylated pentanetriol is 3-methyl-1,3,5-pentanetriol.

9. (original) The system of claim 1, wherein a dispersant precursor used to form the dispersant-functionalized black carbon pigment is an amino precursor selected from the group consisting of para-aminobenzoic acids, isophthalic acids, and triacids.

10. (original) The system of claim 1, wherein the firing frequency is from 18 kHz to 25 kHz.

11. (original) A method of rapidly printing a black ink-jet image, comprising ink-jetting a black ink-jet ink onto a media substrate at a firing frequency from 15_kHz to 25 kHz, said black ink-jet ink comprising:

- i) a liquid vehicle including water, and from 15 wt% to 30 wt% organic solvent, wherein from 3 wt% to 10 wt% of the organic solvent is a methylated pentanetriol co-solvent; and
- ii) from 1 wt% to 6 wt% of a dispersant-functionalized black carbon pigment.

12. (original) The method of claim 11, wherein the carbon pigment is from about 5 nm to about 10 μ m in size.

13. (original) The method of claim 11, wherein the liquid vehicle comprises from about 70 wt% to about 99 wt% of the ink-jet ink composition.

14. (original) The method of claim 11, wherein, in addition to the methylated pentanetriol, the organic solvent includes at least two other organic co-solvents, each being present at from about 1 wt% to about 10 wt%.

15. (original) The method of claim 11, further comprising from 0.001 wt% to 0.1 wt% surfactant.

16. (original) The method of claim 11, wherein the composition is surfactant free.

17. (original) The method of claim 11, further comprising from 0.1 wt% to 4 wt% of an ammonium salt.

18. (original) The method of claim 11, wherein the methylated pentanetriol is 3-methyl-1,3,5-pentanetriol.

19. (original) The method of claim 11, wherein a dispersant precursor used to form the dispersant-functionalized black carbon pigment is an amino precursor selected from the group consisting of para-aminobenzoic acids, isophthalic acids, and triacids.

20. (original) The method of claim 11, wherein the firing frequency is from 18 kHz to 25 kHz.

21. (currently amended) An ink-jet ink composition, comprising a mixture of:
a) a liquid vehicle having from 15 wt% to 30 wt% organic solvent, wherein from 3 wt% to 10 wt% of the organic solvent is 3-methyl-1,3,5-pentanetriol;
b) from 1 wt% to 6 wt% of a dispersant-functionalized black carbon pigment;
and
c) from 0.1 wt% to 4 wt% of an ammonium salt.

22. (original) The composition of claim 21, wherein the carbon pigment is from about 5 nm to about 10 μm in size.

23. (original) The composition of claim 21, wherein the liquid vehicle comprises from about 70 wt% to about 99 wt% of the ink-jet ink composition.

24. (original) The composition of claim 1, wherein, in addition to the methylated pentanetriol, the organic solvent includes at least two other organic co-solvents, each being present at from about 1 wt% to about 10 wt%.

25. (original) The composition of claim 21, further comprising from 0.001 wt% to 0.1 wt% surfactant.

26. (original) The composition of claim 21, wherein the composition is surfactant free.

27. (original) The composition of claim 21, wherein the dispersant-functionalized carbon black is formed using a dispersant precursor selected from the group consisting of para-aminobenzoic acids, isophthalic acids, and triacids.